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FLOOD ZONING USING THE HEC-RAS HYDRAULIC MODEL IN A GIS ENVIRONMENT

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ABSTRACT
This research estimates the flood zone and economic damages over an 8.2 km reach of the perennial Laeen Soo River in the northern Khorasan Province, Iran, using HEC-GEORAS, a combination of HEC-RAS with Arcview GIS software. The 1:500 map of the Khorasan water district has been used, and the land use of the region was classified into 16 types. The roughness coefficient of each land use for four seasons of the year was estimated separately, using two general methods of the U.S. Soil Conservation Service (SCS) and standard tables. The flood zones for floods with return periods of 10 to 200 years were calculated. The results showed that the combination of GIS with the HEC-RAS model was very powerful and efficient in flood zone analysis. The studies on the Laeen Soo River showed that the zone of a flood in summer was more extensive than other seasons, and the SCS method gave a higher Manning coefficient. It is recommended that for flood zoning of the Laeen Soo River, that the summer be chosen as the design criterion and the SCS method as the method of Manning coefficient estimation.

Reference: *Zadeh, A.H., M.Z. Ahmadi, M.B. Sharifi and M. Masoudian; Flood Zoning Using the HEC-RAS Hydraulic Model in a GIS Environment, Journal of Environmental Hydrology, Vol. 13, Paper 2, February 2005*

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